SANTA CRUZ BIOTECHNOLOGY, INC.

COX4I2 siRNA (m): sc-142525

BACKGROUND

The cytochrome c oxidase (COX) family of proteins function as the final electron donor in the respiratory chain to drive a proton gradient across the inner mitochondrial membrane, ultimately resulting in the production of water. The mammalian COX apoenzyme is a dimer, with each monomer consisting of 13 subunits, some of which are mitochondrial and some of which are nuclear. Cytochrome c oxidase IV (COX4) is a nuclear-encoded subunit of COX that may play a role in regulating COX activity. COX4 is expressed ubiquitously in adult human tissue with the strongest levels of expression in the pancreas and moderate expression levels in heart, skeletal muscle and placenta. Two isoforms exist for COX4, namely COX4I1 and COX4I2, and they are encoded by two different genes. COX4I2 (cytochrome c oxidase subunit 4 isoform 2), also known as COX4B, COX4-2, COX4L2 or COXIV-2, is the less common isoform and is incorporated into the COX apoenzyme under hypoxic conditions to optimize COX activity.

REFERENCES

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2. Lomax, M.I., et al. 1992. Rapid evolution of the human gene for cytochrome c oxidase subunit IV. Proc. Natl. Acad. Sci. USA 89: 5266-5270.
3. Makris, G.J., et al. 1997. The gene encoding subunit IV of cytochrome c oxidase maps to mouse chromosome 8. Mamm. Genome 7: 789-790.
4. Bachman, N.J., et al. 1999. The 5' region of the COX4 gene contains a novel overlapping gene, NOC4. Mamm. Genome 10: 506-512.
5. Hüttemann, M., et al. 2001. Mammalian subunit IV isoforms of cytochrome c oxidase. Gene 267: 111-123.
6. Vizirianakis, I.S., et al. 2002. Differentiation-dependent repression of c-myc, B22, COX II and COX IV genes in murine erythroleukemia (MEL) cells. Biochem. Pharmacol. 63: 1009-1017.
7. Online Mendelian Inheritance in Man, OMIM™. 2002. Johns Hopkins University, Baltimore, MD. MIM Number: 123864. World Wide Web URL: http://www.ncbi.nlm.nih.gov/omim/

CHROMOSOMAL LOCATION

Genetic locus: Cox4i2 (mouse) mapping to 2 H1.

PRODUCT

COX4I2 siRNA (m) is a target-specific 19-25 nt siRNA designed to knock down gene expression. Each vial contains 3.3 nmol of lyophilized siRNA, sufficient for a 10 µM solution once resuspended using protocol below. Suitable for 50-100 transfections. Also see COX4I2 shRNA Plasmid (m): sc-142525-SH and COX4I2 shRNA (m) Lentiviral Particles: sc-142525-V as alternate gene silencing products.

PROTOCOLS

See our web site at www.scbt.com for detailed protocols and support products.

STORAGE AND RESUSPENSION

Store lyophilized siRNA duplex at -20° C with desiccant. Stable for at least one year from the date of shipment. Once resuspended, store at -20° C, avoid contact with RNAses and repeated freeze thaw cycles.

Resuspend lyophilized siRNA duplex in 330 µl of the RNAse-free water provided. Resuspension of the siRNA duplex in 330 µl of RNAse-free water makes a 10 µM solution in a 10 µM Tris-HCl, pH 8.0, 20 mM NaCl, 1 mM EDTA buffered solution.

APPLICATIONS

COX4I2 siRNA (m) is recommended for the inhibition of COX4I2 expression in mouse cells.

SUPPORT REAGENTS

For optimal siRNA transfection efficiency, Santa Cruz Biotechnology's siRNA Transfection Reagent: sc-29528 (0.3 ml), siRNA Transfection Medium: sc-36868 (20 ml) and siRNA Dilution Buffer: sc-29527 (1.5 ml) are recommended. Control siRNAs or Fluorescein Conjugated Control siRNAs are available as 10 µM in 66 µl. Each contain a scrambled sequence that will not lead to the specific degradation of any known cellular mRNA. Fluorescein Conjugated Control siRNAs include: sc-36869, sc-44239, sc-44240 and sc-44241. Control siRNAs include: sc-37007, sc-44230, sc-44231, sc-44232, sc-44233, sc-44234, sc-44235, sc-44236, sc-44237 and sc-44238.

RT-PCR REAGENTS

Semi-quantitative RT-PCR may be performed to monitor COX4I2 gene expression knockdown using RT-PCR Primer: COX4I2 (m)-PR: sc-142525-PR (20 µl). Annealing temperature for the primers should be 55-60° C and the extension temperature should be 68-72° C.

RESEARCH USE

For research use only, not for use in diagnostic procedures.